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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,678	02/24/2004	Yoshitake Fukaya	Q80089	1894

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EXAMINER

STEIN, STEPHEN J

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,678

Applicant(s)

FUKAYA ET AL.

Examiner

Stephen J. Stein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 9-12, 19-22 and 29-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13-18, 23-28 and 33-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 1/27/05, 5/6/04 + 2/24/04.
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8, 13-18, 23-28 and 33-36, drawn to a refractory metal plate, classified in class 428, subclass 469.
 - II. Claims 9-12, 19-22 and 29-32 drawn to a method of producing a refractory metal plate, classified in class 427, subclass 446.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by the materially alternative process of forming the oxide coating by chemical vapor deposition.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Alan Kasper on January 27, 2006 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-8, 13-18, 23-28 and 33-36. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-12, 19-22 and 29-32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

5. The JP references identified as “5-49736” and “2-38659” listed on the PTO-1449 filed February 24, 2004 have not been considered, because they were not submitted by applicant and could not otherwise be identified by the examiner. A line has been drawn through these references on the PTO-1449.

Claim Objections

6. Claims 1, 14 and 23 are objected to because of the following informalities: Claims 1, 14 and 23 recite the limitation “at least one of, or a mixture of oxide powders of two or more of.....”. Since, the limitation “two or more of” is fully encompassed by the limitation “at least one of”. It is redundant to claim them in the alternative. Correction is required.

Claim Rejections - 35 USC § 112

7. Claims 1-8 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 1-8 and 13 recite the limitation “a metal composed of one of molybdenum, tungsten, and an alloy of a molybdenum *group* and a tungsten *group*”. This limitation makes the claims indefinite because it is unclear if applicants are referring to alloys of molybdenum and tungsten or to alloys of all the group VI metals including chromium (e.g. the molybdenum group).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 6-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,259,061 (Dubetsky).

Dubetsky teaches a setter plate comprising a thick plate of a refractory metal of molybdenum or tungsten or their alloys and a surface coating of a ceramic material coated on the entire substrate (col. 2, lines 14-26). Dubetsky further teaches that the ceramic material on the substrate is any suitable ceramic material which will withstand the high sintering temperature without contaminating the substrate and that a preferred coating material is Al_2O_3 (alumina) which is applied by plasma spraying and which may have a thickness of 0.05mm (50 μm) to 0.25mm (250 μm) (See col. 3, lines 32-41). With regard to the process limitations recited in the claims, process limitations in product claims are generally not dispositive on patentability unless it is shown that the process limitations produce a materially different product. MPEP §2113.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubetsky as applied to claim 1 above.

As stated above, Dubetsky discloses a refractory setter plate made of tungsten, molybdenum or their alloys and an alumina coating.

Although, Dubetsky is silent on the surface roughness, absent a showing of unexpected results with respect to Ra and Rmax surface roughness (a result effective variable), it would have been obvious to optimize the surface roughness through routine experimentation. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

13. Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubetsky.

Dubetsky teaches a setter plate comprising a thick plate of a refractory metal of molybdenum and surface coating of alumina (col. 2, lines 14-26 and col. 3, lines 32-41).

With regard to the claimed purity, absent a showing of criticality with respect to the claimed purity of the molybdenum plate, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the purity of the molybdenum plate. "Differences in degree of purity of itself does not predicate invention" *In re King and Waugh*, 27 C.C.P.A. (Patents) 754.

With regard to the claimed ratio of the disk shaped crystal grains and the thickness of crystal grains within the molybdenum plate (both result effective variables), it would have been obvious to optimize the parameters through routine experimentation. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to the process limitations recited in the claims, process limitations in product claims are generally not dispositive on patentability unless it is shown that the process limitations produce a materially different product. MPEP §2113.

14. Claims 23-28 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubetsky in view of JP 63157832A (Takebe et al.).

Dubetsky teaches a setter plate comprising a thick plate of a refractory metal of molybdenum and surface coating of alumina (col. 2, lines 14-26 and col. 3, lines 32-41). Dubetsky is silent on the molybdenum plate comprising 0.1 to 1.0 wt% lanthanum or lantanthanum oxides or that the plate has crystal grains structure extending in a substantially fixed direction.

Takebe teaches a MO plate which comprsies 0.1 to 2.0 wt. Percent La or La oxide with with the balance being MO (See abstract). The reference further teaches that addition of the La or of La oxide provide low deformability at high temperature and that the growth of the grain is controlled in a direction of plate thickness (a fixed direction) (See abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to add La or La oxide as disclosed by Takebe to the alumina coated molybdenum setter plate of Dubetsky because it would provide improved deformability and would allow for control of direction of the crystal grains.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Stein whose telephone number is 571-272-1544. The

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examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m. If the attempts to reach the examiner are unsuccessful, the examiner's supervisor, Deborah Jones can be reached by dialing 571-272-1535. The official fax number is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 3, 2006



Stephen J. Stein
Primary Examiner
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